SPIRIT OF THE WOLVERINE

A rugged and little-known species fights for survival among Montana's peaks. Noting the wolverines' particular vulnerability to the effects of climate change, a group of dedicated conservationists—from scientists tracking their every move to property owners protecting prime habitat through The Humane Society Wildlife Land Trust—are doing what they can to save the animals.

by DOUGLAS H. CHADWICK

If wolverines have a strategy, it's this: Go hard, and high, and steep, and never back down, not even from the biggest grizzly, and least of all from a mountain. Climb everything: trees, cliffs, avalanche chutes, summits. Eat everybody: alive, dead, long-dead, moose, mouse, fox, frog, its still-warm heart or frozen bones.

Which is why I think it's fair to say, there's wild, and then there's wolverine.

One of North America's rarest and least-known large mammals, wolverines roamed in pre-settlement times as far south as California, Colorado, and Utah and eastward into New England. Today, perhaps no more than 300 survive south of Canada.

Taking down fully grown elk or caribou, competing for carcasses with much bigger predators, and carrying out spectacular climbs that few human alpinists would dare try and none could match for speed, the 25- to 40-pound animals certainly live up to their reputation as strong and ferocious beyond all proportion to their actual size. But their portrayals as foul-smelling demons of destruction and a threat to human safety are myths that reveal a good deal about human psychology yet almost nothing about the true nature of this largest terrestrial member of the mustelid family. Their scientific label, *Gulo gulo*, is Latin for glutton, another in a long list of derogatory names such as "devourer" and "devil bear."

Subject to relentless persecution, commercial trapping for their fur, and habitat loss, the wolverine faces an uncertain future: The animal is the land-based equivalent of the polar bear in terms of its vulnerability to global warming. And when scientists and volunteers at Montana's Glacier National Park began tracking wolverines, actual data was still so sketchy that every day was a fresh opportunity to discover new dimensions of their lives.

ASTONISHING CLIMBS, UNEXPECTED MIRTH

When the Glacier Wolverine Project started in 2002, only a handful of winter birthing and rearing dens had ever been reported in the Lower 48. That number now stands above two dozen, half of them located by the project team.

I joined the project as a volunteer, eager to help Forest Service biologists Jeff Copeland and Rick Yates learn more about these mysterious animals. Capture and radio-tagging helped us track wolverines' park travels, and in April 2004, Yates and volunteer Alex Hasson located evidence of their exceptionally hardy constitution. Following the transmitter signal of a young female wolverine, they found her atop a sharp, solitary peak known as Bearhat Mountain—a monumental fang rising between two lakes. Too sheer-sided to even hold much stunted alpine vegetation, it is almost entirely bare stone, open to the weather on every side, encased by ice and snow well into May.

I can't think of any possible prey being within 2,000 vertical feet of the summit under those conditions. Nor do I know of a route up Bearhat that leads anywhere but right down another side with even steeper, more slippery cliffs.

Was her ascent to this inhospitable locale another example of wolverine attitude, the sort of outrageous feat that might seem routine to a beast who combines a near absence of fear with a superabundance of strength? Or could this wolverine have gone up to take in the view—not through her eyes, as we would, but through her dominant sense organ, the wolverine nose? Was she up there surveying grand vistas of scents, more than prepared to cover the miles to their source with her tireless wolverine lope?

That August, I got my own glimpse into her kind's secret world, when Hasson invited me to accompany him on a route I loved to ramble, winding through alpine meadows and weather-dwarfed subalpine fir. Thirty feet from the spot where he picked up a signal, three wolverines were drinking from a seep among yellow monkey flowers, purple penstemon, and a crimson array of Indian paintbrush. It took a moment to grasp that the smaller wolverine with silvery streaks was the mother. The two young males were a darker, chocolaty brown with bronze streaks. Mom looked gaunt beside them; she was doing all the work, hunting for her offspring while they hid at rendezvous sites among boulders. As the family descended toward a rock outcrop, the brothers acted intent on drawing their mother into a play session. They took turns jumping to put their forelegs on her back, nudging and nipping her and each other.

The trio braided their way downslope like a single large furry animal with all kinds of bulging, squirming parts, separating only to test the winds rising from the vast countryside below. These were handsome, exuberant creatures, agile and strong in equal measures. And although most everything on a flower-lit day atop the continent seems to exude vitality, this wild family so unexpectedly close gave off bursts that burned an afterglow into my brain.

GLACIER NATIONAL PARK, MONTANA

> One of the great things about studying wolverines is that the animals make their home among some of the highest, loveliest, and wildest landscapes left in the Lower 48. Trying to keep up with them amounts to constant adventure in a world of avalanches, blizzards, sheer cliff faces, patches of thin lake ice, sub-zero moonlit ski trips, marathon hikes, cliff walls with tiny handholds, and big silver-tipped bears. The most exciting part was knowing that at any moment of any given day, we could discover something entirely new about one of the most extraordinary and yet least-understood mammals on the continent.
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> — DOUGLAS H. CHADWICK

To track wolverines' movements throughout the park, Chadwick (shown above) and others outfitted them with GPS collars following trapping and sedation. In 2002, only a handful of dens had been reported in the continental U.S., but now more than two dozen have been identified.

OPPOSITE PAGE, JUVENILE WOLVERINE: DAMIAN POWER/WOLFHOUND WILDLIFE SERVICES. THIS PAGE: ALEX J. HASSON

MORE MYSTERIES UNLOCKED

I wasn't the only volunteer who had become hooked on the animals by witnessing an unexpected side to their lives. Project veterinarian Dan Savage would drive for hours and ski high into the backcountry to radio-tag a captured wolverine—as often as not in a subzero blizzard at night. He'd been lured by Copeland, the project's chief scientist, and by an experience he'd had hiking to a high-elevation basin filled with zinging-cold meltwater. Exploring upstream, he'd spied three dark objects moving on a snowfield above.

Despite a lifetime of venturing through Montana's backcountry, these were the first wolverines he'd ever seen, and Savage was surprised to find them engaged in a game of sliding down a melting snowbank. "All the mystery around wolverines, and now: play! I think watching play is one of the things that bonds us to animals. It allows us to see the qualities that we have in common more easily. More, there's this sense of a shared spirit."

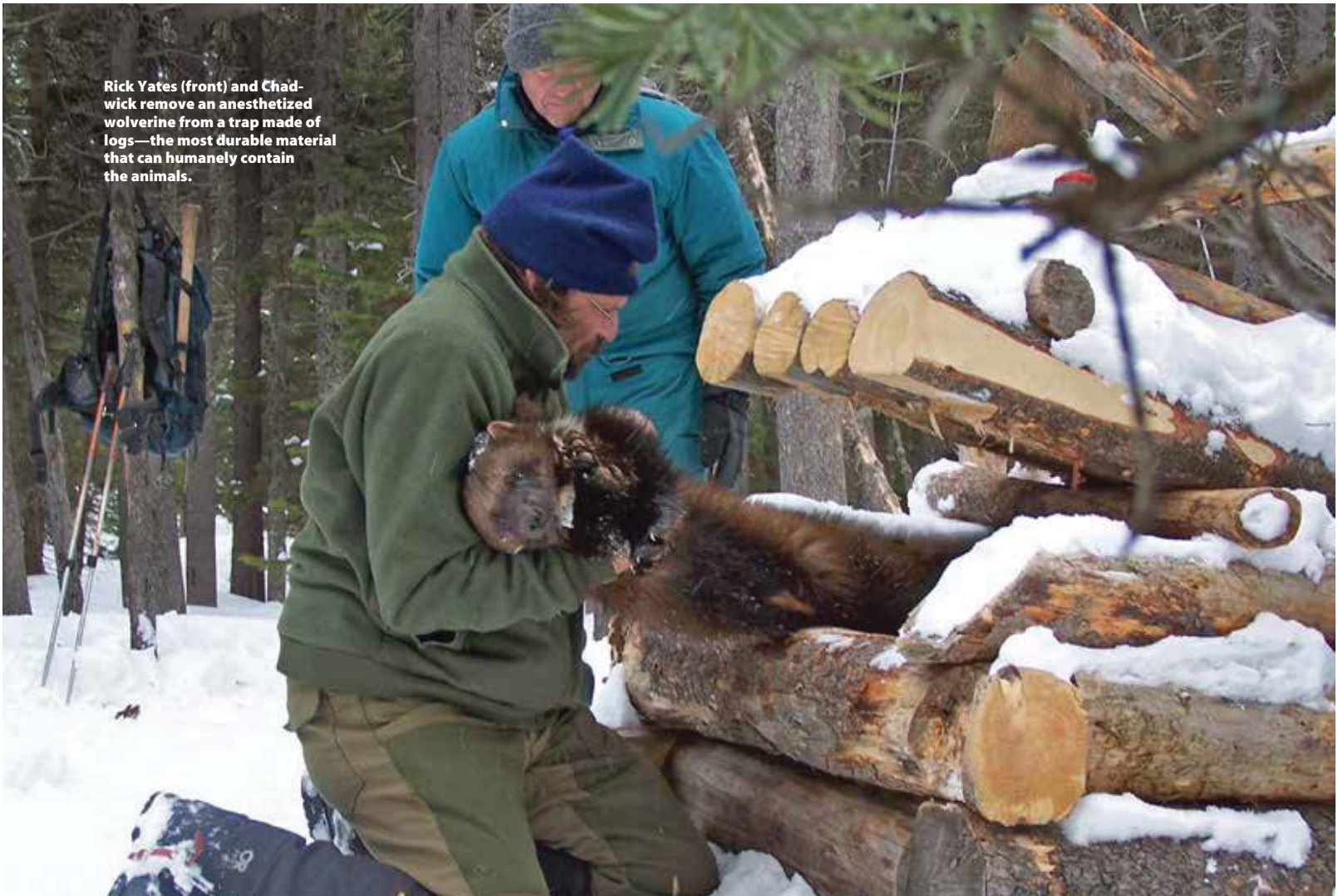
During a study in the wilds of Idaho, Copeland made another discovery about wolverines' gentler side. It was once thought that after their first six months, kits permanently separate from their mothers to begin a solitary life, too surly and short-tempered to tolerate others except for the brief purpose of mating. Most biologists held that a male would even kill his own offspring. But Copeland observed one adult male often traveling with his progeny. In Glacier, we recorded similar findings. After leaving their mother, young wolverines are allowed to remain within both parents' territories for nearly another year. Though often alone, they would sometimes travel with the mother and at other times with the father in a sort of *gulo* version of joint custody. And adult males occasionally traveled with one or another of their mates outside the breeding season as though they simply enjoyed the company.

Our mapping of wolverines' homes also revealed details about their fragile existence. The dozen or so dens we located high among the peaks were dug 8 to 10 feet down into a thick snowpack that would last until at least early May, when families emerged. The animals seldom spent time at warmer elevations. Copeland and a Forest Service colleague documented a close association between their range in western North America and areas where the average maximum daily temperature in August stayed below 70 degrees.

Gulo gulo has a higher metabolic rate than other mammals its size, a revved-up internal engine that generates extra body heat. Double-layered fur repels frost and moisture, holding in warmth. With unusually large feet that spread their weight, wolverines move more easily over snow than competitors or prey, while 2-inch-long claws serve as crampons on ice and frozen crusts. All this results in a mammal so tied to a cold climate with deep, lingering snow that it becomes one of the most vulnerable animals on the planet in an age of global warming.

SAVING LAND TO SAVE WOLVERINES

To find enough food in that tall, snowbound topography, each



Rick Yates (front) and Chadwick remove an anesthetized wolverine from a trap made of logs—the most durable material that can humanely contain the animals.

A Glacier Wolverine Project volunteer searches for tracked animals' radio signals.

wolverine must keep on the go day and night, covering rugged landscapes of several hundred square miles—another key finding from the study. The 1,500-square-mile Glacier Park contains just 40 to 50 individuals—the biggest population south of Canada—because that's about all that can squeeze in, given their territorial requirements.

The wolverines of the Lower 48 don't form a single, continuous population but rather what ecologists term a meta-population: several dozen here, a handful there, another cluster a few mountain ranges away. By itself, no single group includes enough reproductive adults to counter the effects of inbreeding or readily recover from prolonged drought, massive wildfires, or an epidemic. But as long as the enclaves can exchange members every so often, the meta-population can adapt and endure. Together they stand; divided—cut off from one another—they will fall over time. Therein lies the challenge. Industry's chase after new sources of timber, minerals, and fossil fuels reaches farther into the backcountry every year, while recreational activities such as high-elevation snowmobiling keep expanding as well. As habitats are fragmented, connections between animal populations are lost, and parks and wilderness areas become more like islands in a rising sea of development and disturbance.

Wherever access to wildlands expands, pressure from trapping is likely to increase. Montana is the only place in the Lower 48 that still allows wolverine trapping and hunting. Although the killing limits have been reduced over the years, that is almost beside the point. Expert scavengers with big appetites, an indiscriminate taste for leftovers, and a nose designed to locate the faintest of scents, wolverines readily make their way into traps set for other furbearers, from otters to coyotes. One young male sought a new home almost 100 miles west of Glacier, at the border of Montana and northern Idaho. He died in steel jaws set to catch bobcats in a national forest. Game departments, which promote trapping, dismiss results like this as "incidental captures" or "non-target mortalities." In reality, they are anything but incidental to a low-density population that reproduces fairly slowly and totals only a few hundred south of Canada.

So what steps can be taken to ensure the wolverine's survival? Biologists and bureaucrats with the U.S. Fish and Wildlife Service have asked themselves that lately as they debated whether *Gulo gulo* deserved federal protection under the Endangered Species Act. Unfortunately, though they agreed that action is warranted, they announced in December that it is precluded by higher priorities (translation: lack of funding and personnel). But wildlife managers can still focus on other measures, starting with a blanket ban on traps within the species' strongholds, plus a no-trap buffer zone around key populations. And they should identify and safeguard corridors between surviving groups.

Much of the mountain West is public land overseen by agencies such as the U.S. Forest Service and Bureau of Land Management, whose responsibilities—in theory if not always in practice—include conserving wildlife resources. The owners of private lands are under no such obligation. This is where the work of The Humane Society Wildlife Land Trust, The Nature Conservancy, Vital Ground, and similar groups becomes critically important. By purchasing land or arranging conservation easements to limit development in key habitats and travel corridors, these organizations help keep rapidly growing areas of the West permeable to the wealth of wildlife that is part of the reason so many folks want to live here.

A splendid example comes from the high Centennial Valley of southwestern Montana, where Anthony and Donna Demetriades and their family donated easements to The Humane Society Wildlife Land Trust, restricting development on 240 acres at the headwaters of the Missouri River as it comes tumbling off the Continental Divide. Grizzlies leave fresh tracks under the streamside brush, where moose peer from among the willows. Elk and mule deer abound, and cougars stalk the rockier slopes while golden eagles and peregrine falcons wheel overhead.

The Roaring Creek Ranch alone can't save creatures that large and far-roaming. But together with adjoining public lands and other private properties, the contribution becomes enormous and could connect the wildlife of the Centennial Range to the south, the Gravelly Mountains to the north, Yellowstone National Park not far to the east, and Idaho wilderness to the west.

Wolverines too? Yes, every so often, one coming or going through this part of the Rockies strides over the slopes of the property. Protected now, that land forms one more segment in the kind of habitat bridge that can ultimately spell the difference between disappearance and survival for *Gulo gulo*, animals whose inexhaustible energy, determination, and untamed spirit we have only just begun to appreciate for the natural wonders they really are. ■

This adaptation of the author's recently published book, The Wolverine Way, *appears with permission from Patagonia Books. The book follows a multiyear study of wolverines in Montana's Glacier National Park, which received partial funding from The Humane Society Wildlife Land Trust. Learn more about the trust at* humanesociety.org/wlt.

OPPOSITE PAGE: ALEX J. HASSON. THIS PAGE: RICK YATES